cket No.: 02685-5702

## What is claimed is:

1.	A method of task classification using morphemes which operates		
on the task	objective of a user, the morphemes being generated by clustering		
selected ones of salient sub-morphemes from training speech which are			
semantically	and syntactically similar, comprising:		

detecting morphemes present in the user's input communication; and

making task-type classification decisions based on the detected morphemes in the user's input communication.

- 2. The automated task classification method of claim 1, wherein the morphemes include at least one of verbal speech and non-verbal speech.
- 3. The automated task classification method of claim 2, wherein the non-verbal speech includes the use of at least one of gestures, body movements, head movements, non-responses, text, keyboard entries, keypad entries, mouse clicks, DTMF codes, pointers, stylus, cable set-top box entries, graphical user interface entries and touchscreen entries.
- 4. The automated task classification method of claim 1, wherein the morphemes are expressed in multimodal form.
- 5. The automated task classification method of claim 1, wherein the user's input communication is derived from the verbal and non-verbal speech and the user's environment.
- 6. The automated task classification method of claim 1, wherein the morphemes in the user's input communication are derived from the user's actions, including the user's focus of attention.
- 7. The automated task classification method of claim 1, further comprising entering into a dialog with the user to obtain a feedback response from the user.
- 8. The automated task classification method of claim 7, wherein the user is prompted to provide a feedback response includes additional information with respect to the user's initial input communication.

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	9.	The automated task classification method of claim 7, wherein the
user is prompted to provide a feedback response that includes confirmation with		
respect to at least one of the set of task objectives determined in the		
classification decision.		

- 10. The automated task classification method of claim 1, wherein the input communication is routed based on the classification decision.
- 11. The automated task classification method of claim 10, wherein the task objective is performed after the input communication is routed.
- 12. The automated task classification method of claim 1, wherein the method operates in conjunction with one or more communication networks, the communication networks including a telephone network, the Internet, an intranet, Cable TV network, a local area network (LAN), and a wireless communication network.
- 13. The automated task classification method of claim 1, wherein the method is used for customer care purposes.
- 14. The automated task classification method of claim 1, wherein the classification decisions and corresponding user input communications are collected for automated learning purposes.
- 15. The automated task classification method of claim 1, wherein the relationship between the generated morphemes and the predetermined set of task objectives includes a measure of usefulness of a one of the morphemes to a specified one of the predetermined task objectives.
- 16. The automated task classification method of claim 15, wherein the usefulness measure is a salience measure.
- 17. The automated task classification method of claim 16, wherein the salience measure is represented as a conditional probability of the task objective being requested given an appearance of the morpheme in the input communication, the conditional probability being a highest value in a distribution of the conditional probabilities over the set of predetermined task objectives.

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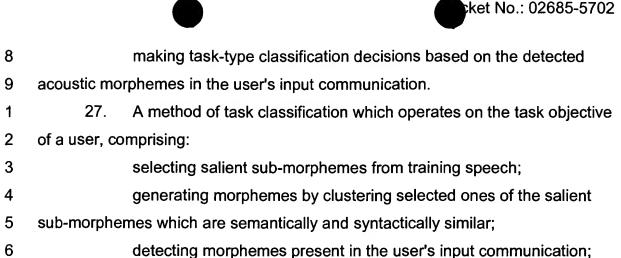


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1	8.	The automated task classification method of claim 16, wherein
each of	the pl	urality of generated morphemes has a salience measure exceeding
a predet	termin	ed threshold.

- 19. The automated task classification method of claim 1, wherein the relationship between the generated morphemes and the predetermined set of task objectives includes a measure of commonality within a language of the morphemes.
- 20. The automated task classification method of claim 19, wherein the commonality measure is a mutual information measure.
- 21. The automated task classification method of claim 20, wherein each of the plurality of generated morphemes has a mutual information measure exceeding a predetermined threshold.
- 22. The automated task classification method of claim 11, wherein the step of making a classification decision includes a confidence function.
- 23. The automated task classification method of claim 11, wherein the input communication from the user represents a request for at least one of the set of predetermined task objectives.
- 24. The automated task classification method of claim 11, wherein the input communication is responsive to a query of a form "How may I help you?".
- 25. The automated task classification method of claim 11, wherein each of the verbal and non-verbal speech are directed to one of the set of predetermined task objectives and each of the verbal and non-verbal speech is labeled with the one task objective to which it is directed.
- 1 26. A method of task classification which operates on the task objective 2 of a user, comprising:
- 3 selecting salient phone-phrases from training speech;
- 4 generating acoustic morphemes by clustering selected ones of the
- 5 salient phone-phrases which are semantically and syntactically similar;
- 6 detecting acoustic morphemes present in the user's input 7

and



making task-type classification decisions based on the detected morphemes in the user's input communication.

28. A method of task classification using acoustic morphemes which operates on the task objective of a user, the acoustic morphemes being generated by clustering selected ones of salient phone-phrases from training speech which are semantically and syntactically similar, comprising:

detecting acoustic morphemes present in the user's input communication; and

making task-type classification decisions based on the detected acoustic morphemes in the user's input communication.